EPI-LOG

Communicable Disease and Epidemiology News
Published continuously since 1961
Laurie K. Stewart, MS, Editor (laurie.stewart@metrokc.gov)

Public Health
Seattle & King County
HEALTHY PEOPLE. HEALTHY COMMUNITIES.
Epidemiology, Prevention Division
Wells Fargo Center
999 Third Avenue, Suite 900
Seattle, WA 98104-4039

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Tuberculosis Outbreak in King County Among East African Young Men

As King County is bringing the tuberculosis (TB) outbreak that began in 2002 among mostly homeless individuals under control, another TB outbreak has now surfaced among mostly young men of East African origin. As of July 21, the total number confirmed or suspected cases with active TB in this new outbreak is 9 individuals; contact investigations and further case finding are ongoing.

On February 24, 2004, the index case of the new outbreak, a 21 year-old Somalian male who came to United States 1998, was suspected of having TB after complaining of 2 weeks of fever and weight loss. A chest radiograph showed left hilar adenopathy, and sputum culture eventually confirmed the diagnosis of TB. On April 1, a 20 year-old male from Ethiopia (in the US since 1984) was hospitalized with symptoms of cough, fever, and weight loss over the course of several months. A chest radiograph showed bilateral cavities consistent with TB; sputum smear showed 4+ acid-fast bacilli (AFB). This patient had previously sought medical treatment in December 2003 for similar symptoms, but the diagnosis of TB was not recognized at that time. Further history and review of radiographic data eventually identified him as the likely source case who may have been infectious as early as October 2003. Between April and May, another three males of East African descent of similar ages were confirmed to have cavitary TB and AFB smears that showed 4+ AFB; all had documented normal chest radiographs within the two months prior to diagnosis. An additional two females and two males, who had social contact with the other cases, were also diagnosed with TB between April and July. All cases have been epidemiologically linked to at least one other case, the majority having had close contact with the source case. At least four of the individuals have TB strain patterns that match. Approximately 70 contacts have been identified, which does not include other contact investigations of these individuals involving jail or health care facilities.

These individuals have similar characteristics of note. All the males are in their late teens or early 20's and are of East African descent (Sudan, Ethiopia, Eritrea, or Somalia), although they have spent varying amounts of time in the US. A majority of them have had experiences dealing with, sharing, or using street drugs—most commonly crack cocaine and marijuana. Most of the men have resided for prolonged periods of time in each others' homes; some of the cases have been involved in assaults and have spent some time in jail in the past year. These individuals come from a close-knit group, and many are reluctant to share information about contacts.

In King County, the number of TB cases in the past few years has increased to all time highs in recent history, fueled, in part, by the ongoing outbreaks. In 2003, of 155 TB cases reported, three-quarters occurred in foreign-born individuals, and almost one-quarter occurred in homeless individuals. Some of the unique difficulties facing TB Control in this newest outbreak investigation include the extreme mobility of this group and their contacts, their reluctance to share information because of illegal activities, issues regarding legal residency status, presumed government intrusion, and cultural barriers to effective communication. In this light, the need for heightened awareness and case finding among health providers to this population remains crucial.

While TB should be considered in the differential diagnosis of all individuals with a prolonged cough, especially in conjunction with other constitutional symptoms, providers should be particularly aware of the possibility of TB, especially in the demographic group described above. The rapid radiographic progression from normal to cavities, as illustrated in these cases, may possibly indicate a more virulent strain of TB; symptoms of TB, despite a normal chest radiograph, should be reason enough to collect sputum for acid-fast bacilli detection and TB culture. Conversely, physicians should also consider sputum collection for an abnormal chest radiograph in this population even without any apparent symptoms. In all cases where TB is suspected, TB Control Program should be notified immediately by calling (206) 731-4579.

Zebra of the Month: Japanese Encephalitis in a College Student

A college student, returning home after 4 ½ weeks of classes in Northern Thailand, was admitted the day of arrival to a local hospital with fever, stiff neck, and photophobia. The individual had not been feeling well and complained to her father about a "cold" which started about 6 days prior to admission. While in

Thailand she went on one overnight camping trip and two day hikes into rural areas, noting numerous mosquito bites. On admission to the hospital, results from analysis of cerebrospinal fluid were consistent with viral meningitis; tests for herpes simplex virus and enterovirus were negative. Malaria, specifically infection with *Plasmodium falciparum*, which can cause cerebral malaria was suspected, but blood smears were negative. A non-contrast MRI showed edema in the hypothalamic region. Her initial hospital course deteriorated, and she became comatose and was intubated. However, by hospital day 5 she started to show remarkable neurologic improvement and was discharged several days later. Cerebrospinal fluid and serum samples that were sent to the CDC for arboviral testing demonstrated reactivity to IgM antigens for Japanese encephalitis.

Japanese encephalitis (JE) virus is one of several flaviviruses (which includes West Nile virus and St. Louis encephalitis virus) that cause encephalitis. The virus usually infects pigs and wild birds but is spread to humans through *Culex tritaeniorhynchus* mosquitoes. The disease is mild or asymptomatic in most infected individuals, but tends to cause severe symptoms in both the young and elderly. Between 30,000 and 50,000 cases of encephalitis caused by infection with JE virus occur annually, with a case fatality rate of 25-60%, and residual neurologic disability in 30-45% of cases. Japanese encephalitis virus is primarily transmitted on the Asian continent, and is particularly endemic in Southeast Asia, China, and the subcontinent. In Northern Thailand, JE is hyperendemic during May to October. Treatment is limited to supportive care.

Though this individual did not seek an evaluation from a travel clinic prior to her trip, the Advisory Committee on Immunization Practices recommends JE vaccine for "persons spending a month or longer in endemic areas during the transmission season, especially if travel will include rural areas". Had she sought a travel evaluation, her need for both travel and routine adult vaccinations, including MMR, hepatitis A & B, IPV, varicella, Td, typhoid, influenza, and rabies, etc., would have been assessed. She would have also been advised of the importance of avoiding mosquito bites by using insect repellent, protective clothing, sleeping in screened quarters, or using bednets.

Viral encephalitis is a notifiable condition in Washington State and is reportable to the local health jurisdiction. Although most testing in the United States for viral encephalitis focuses on herpes virus, enterovirus and West Nile virus, clinicians should be aware of other etiologies, especially in travelers returning from international destinations. Detailing the geographic locations visited, animal contacts, and activities performed while traveling provide helpful clues in narrowing down a differential diagnosis. Public Health-Seattle & King County, in coordination with the Washington Department of Health, can help facilitate testing for suspected arboviral and other less common causes of encephalitis. To report a case of suspect or confirmed viral encephalitis in King County, please call (206) 296-4774.

The CDC's National Center for Infectious Disease Travelers' Health webpage can be found at: http://www.cdc.gov/travel/index.htm

Disease Reporting

AIDS/HIV ..... (206) 296-4645
STDs ..... (206) 731-3954
TB ..... (206) 731-4579
All Other Notifiable Communicable Diseases (24 hours a day) .... (206) 296-4774
Automated reporting line for conditions not immediately notifiable ..... (206) 296-4782

Hotlines

Communicable Disease ..... (206) 296-4949
HIV/STD ..... (206) 205-STDS

Online Resources

Public Health Home Page: www.metrokc.gov/health/
The *EPI-LOG*: www.metrokc.gov/health/providers
Subscribe to the Public Health Communicable Disease listserv (PHSKC INFO-X) at:
http://mailman.u.washington.edu/mailman/listinfo/phskc-info-x

Reported Cases of Selected Diseases, Seattle & King County 2004

	Cases Reported in June		Cases Reported Through June	
	2004	2003	2004	2003
Campylobacteriosis	31	19	121	109
Cryptosporidiosis	1	5	12	21
Chlamydial infections	616	459	2,671	2,446
Enterohemorrhagic *E. coli* (non-O157)	0	0	0	0
***E. coli* O157: H7**	2	1	11	12
Giardiasis	14	6	65	52
Gonorrhea	111	110	583	715
***Haemophilus influenzae* (cases <6 years of age)**	0	0	2	0
Hepatitis A	2	0	5	15
Hepatitis B (acute)	1	3	15	18
Hepatitis B (chronic)	38	42	311	302
Hepatitis C (acute)	0	0	6	5
Hepatitis C (chronic, confirmed/probable)	49	75	610	513
Hepatitis C (chronic, possible)	27	24	182	126
Herpes, genital (primary)	82	60	376	334
HIV and AIDS (includes only AIDS cases not previously reported as HIV)	35	37	217	220
Measles	0	0	6	0
Meningococcal Disease	0	0	9	3
Mumps	0	0	0	0
Pertussis	16	27	118	119
Rubella	0	0	0	0
Rubella, congenital	0	0	0	0
Salmonellosis	27	24	104	113
Shigellosis	2	6	32	58
Syphilis	12	6	48	41
Syphilis, congenital	0	0	0	0
Syphilis, late	6	5	39	25
Tuberculosis	19	3	67	70

The *Epi-Log* is available in alternate formats upon request.

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